Barriers To Transmission Investment

Federal Energy Regulatory Commission

Technical Conference – Washington, DC – April 22, 2005

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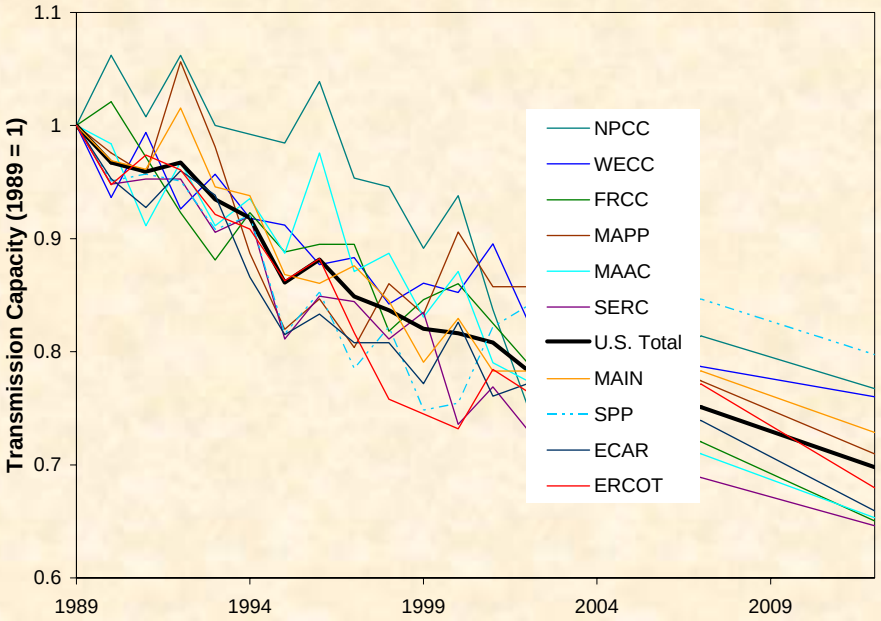
Robust Reliable Transmission is Vital For The National Economy and Security

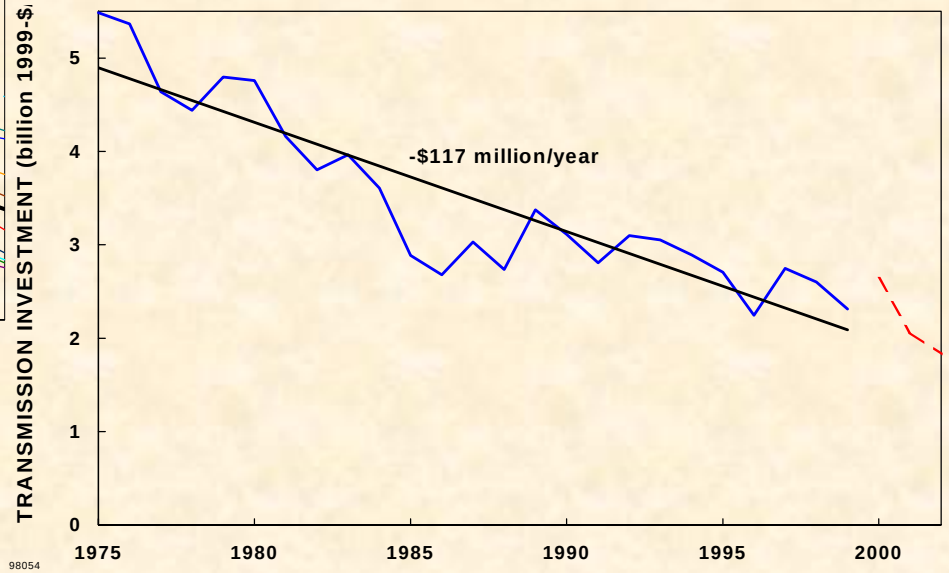
- **By its nature, with limited flow control or storage, AC transmission is a regulated communal asset**
- **Transmission is critical for power system reliability**
- **Transmission enables wholesale electric power competition**

In Spite of The Critical Importance, Transmission Investment Is Not Keeping Up With Load Growth



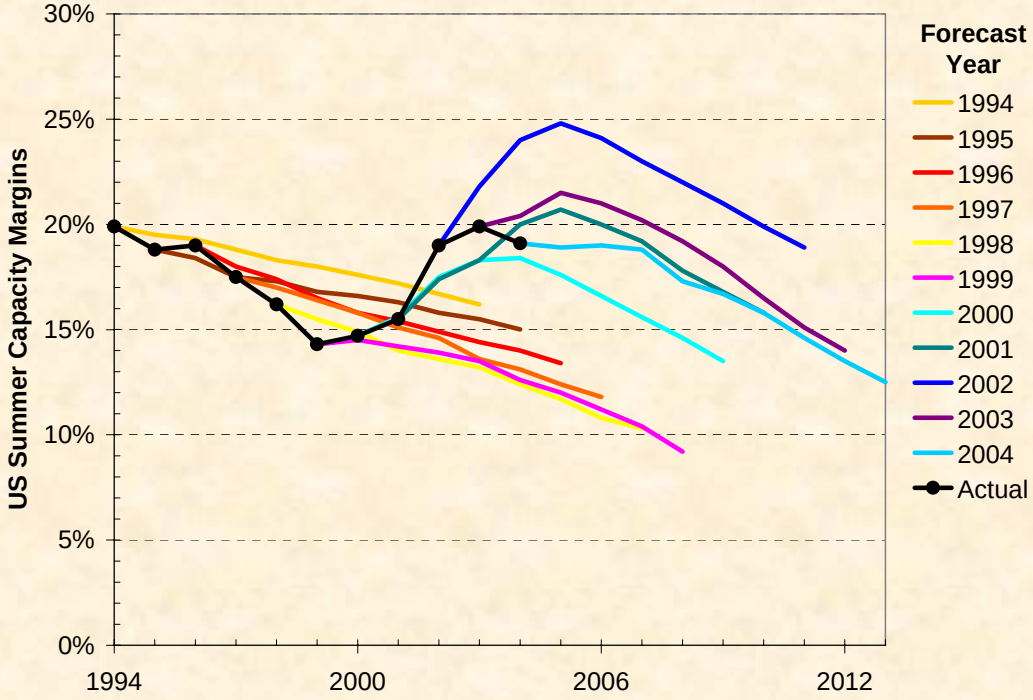
Transmission *capacity* relative to load has been declining in *every* NERC region since 1982

Transmission *investment* has been declining for three decades



Generation Capacity Was Declining Until 2000

An Analogous Situation



- **Generation capacity margins were declining in the late 90's and the decline was projected to continue**
- **In 2000 investors found incentives to build generation**
- **Types and locations of generation may not be ideal but *the inability to invest was addressed***

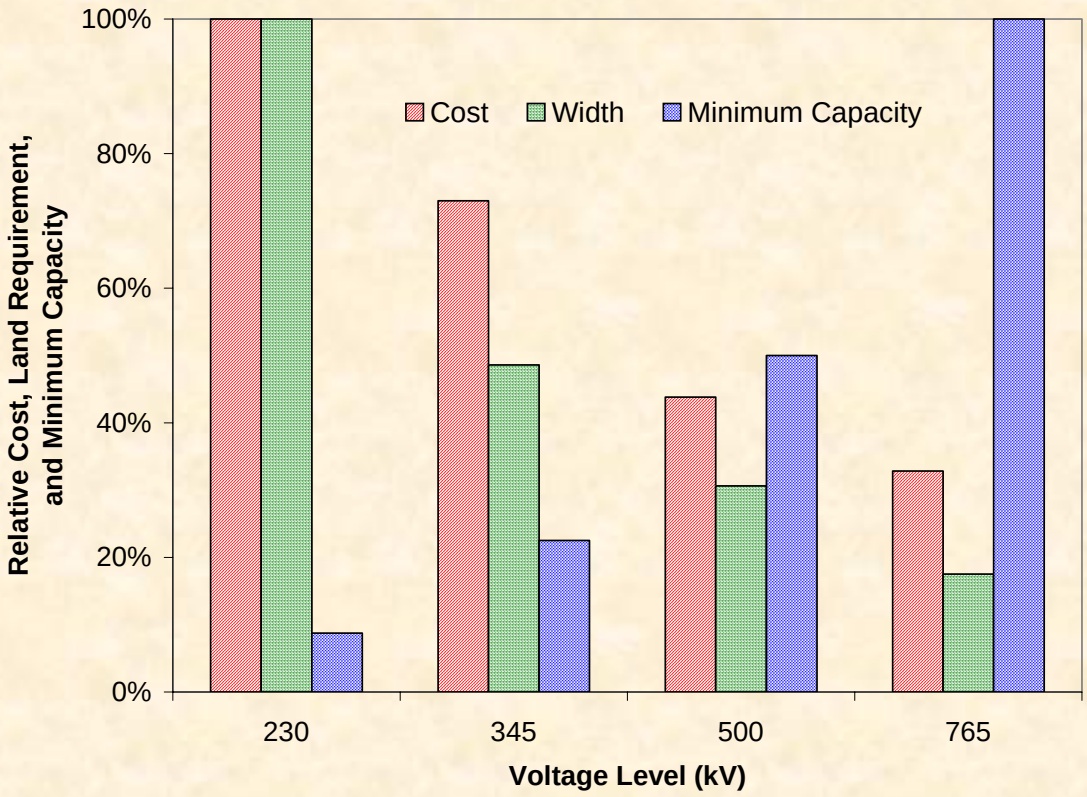
Why Is Transmission Investment Lagging?

- **Limited profit potential from a regulated investment**
- **Significant perceived investment risk**
  - **High up front capital cost**
  - **Long, complex regulatory process**
  - **Large number of potential interveners**
  - **Re-opening of entire cost-of-service rate**
  - ➢ **Long *at-risk* time between investment and return**

❖ **The Risk/Reward equation clearly does not work for investors**

Complicating Factors

- **Long project life**
- **Economies of scale**
- **Generation / Transmission alternatives**
- **Large geographic scope**
- **Societal needs, benefits, and decision**
- **...**



Technology Will Help – But Can Not Solve The Problem

- **Many new technologies, and some old ones, can help maximize the capacity of the existing transmission system**
- **Superconductivity, Advanced conductors, Power electronics, FACTS devices, Phase angle regulators, HVDC, etc.**

➢ **Research should be supported to further develop these technologies to increase their reliability and reduce their costs**

❖ **None of these technologies will, in the reasonably near term, eliminate the need for new transmission or fundamentally change the transmission investment risk/reward calculation**

Solutions

The transmission investment risk/reward equation must be changed

- **Reduce the perceived risk and increase regulatory certainty**
  - **Consider separating new transmission project cost recovery from the entire cost-of-service rate**
  - **Reduce the process time**
  - **Provide decision certainty before investments are made**
- **And/or increase the possible reward**